

Chapter 3. DEMAND

Central to a discussion and determination of recreation needs is an understanding of recreation demand. The Information Subcommittee was responsible for determining the approach to demand analysis in the *SCORP 2000*. The first step in this evaluation was a review of the 1988 demand data to assess its usefulness to the new SCORP. Several years had passed since the previous survey had been conducted, and that approach was structured around resources, not activities. Consequently, the Subcommittee began to determine a new approach for the *SCORP 2000*.

A general population survey was designed, conducted, and analyzed in preparation for this report. The consulting firm of Chadwick, Martin, and Bailey in Boston developed the survey. Detailed methodology, findings, and a copy of the survey instrument for the phone survey can be reviewed by contacting the Division of Conservation Services.

Summary of General Population Survey Methodology

The main focus of the demand analysis was on development of the general survey. The major objectives of this survey were to present usage patterns, test satisfaction with outdoor recreation areas, and evaluate unmet needs. Resources in the Commonwealth were organized into 12 groups and data were collected and analyzed according to these groups.

The sample for the survey was all Massachusetts residents 18 years of age or older. Respondents identified themselves as 18 years or older but not necessarily as head of household. Respondents were selected proportionately from the seven SCORP planning regions. An oversample of two groups, African-American and Hispanic, were collected to ensure sufficient representation. These oversamples were collected using lists of minorities based on the density of racial and ethnic distribution and resident surnames.

Telephone interviews were selected as the survey tool. Twenty-minute interviews were conducted in the first three weeks of April, 1995. Calls were made during weekday evenings and on weekends during the daytime. Respondents were selected using a random digit dialing procedure, ensuring selection of unlisted phone numbers. A three-callback rule was followed to ensure that all potential respondents were given the opportunity to participate in the study.

A total of 1,434 samples were obtained (including oversamples) and were weighted by region, age, race, and gender based on the 1990 U.S. Census data. This method gave a more accurate statewide representation.

Respondents were asked about their resource use within the past 12 months, including number of visits, overall satisfaction, and type of activities participated in. Respondents were also asked about satisfaction and dissatisfaction with specific sites based on a random selection of two resources from within the 12 categories of resources they had indicated visiting. These categories represent the range of natural resources available in the Commonwealth.

Respondents were then asked detailed questions about the two most often visited resource areas, including location, ownership, and mode of travel. Finally, respondents were asked about unmet need, funding for recreation; basic demographic characteristics were also collected. Throughout the survey, respondents were allowed to give open-ended answers to most questions. This method generated more accurate responses, as respondents indicated exactly how they felt rather choosing from a limited, pre-selected response list. Open-ended responses were then coded and recorded.

It is important to note that results shown are based on the region people live in, which is not necessarily the region they visit to recreate. Information on location of recreation resources is available, but the majority of the results are based on place of residence. Finally, statistically significant differences are noted on certain data tables. This notation indicates statistical difference from statewide results.

Survey Limitations

The fundamental nature of sampling is that a relatively small number of individual members of a population are selected and used to make inferences about the general population. An adequate sample size is chosen to ensure sample statistics accurately represent those of the population. Sampling always involves some degree of error usually due to the sample size and population.

In this study the error rate for the entire sample was 2.6%. However, the error for each regional sample changes, depending on the regional sample size. The quotas that were set for each region result in higher confidence levels at larger sample sizes. For example, the error range for regions where over 100 calls were made was 9.8%, while the range for the Metropolitan Boston Region, where 600 calls were made, was 3.9%. Although there is variation among sample error, all error ranges are within acceptable limits, allowing reasonable confidence in data accuracy.

The statewide results shown in this study should be considered carefully. Statewide measures do not give proper insights into regional differences, which many times are more significant and more revealing. Regional results have been reported whenever possible, but due to the expense of data collection and resulting limitations on sampling population, certain results can only be reported at the state level. In these cases, regional analyses do not provide adequate sample sizes to yield meaningful results.

Sample Population

Of the 1,434 interviews completed, the majority were taken from respondents within the eastern portion of the state: the Metropolitan Boston, Northeast, and Southeastern Regions. The more heavily populated areas required larger sample sizes. The survey sample closely followed the racial makeup of the state, as well as the age breakdown and percent of those households with a disabled person.

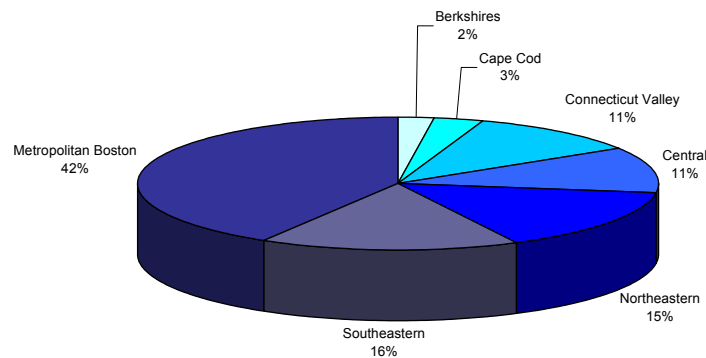


Figure 8. Respondent Profile by Region

Demand for Recreational Areas

As mentioned earlier in this report, recreational activities were grouped into 5 general categories. Similarly, recreational areas were also grouped into 12 general categories. The Information Subcommittee felt that the demand survey would be most useful if it could provide clear indications of both the types of recreation activities, as well as types of recreational areas (or resources) that should be provided across the Commonwealth. Demand data was analyzed, and findings were reported in terms of these 12 recreational areas. Each type of area is defined as follows:

12 Major Recreational Areas

Recreational Area	Description
Rivers or streams	Rivers or streams and associated lands
Lakes or ponds	Lakes or ponds and accompanying lands (e.g., lake or beach)
Coastal beaches or coastal shorelines	Beaches, cliffs, rocky shorelines
Wetlands	Inland or coastal marshes, estuaries, bogs, swamps
Bikeways	Paved corridors primarily for bike use such as the Cape Cod Rail Trail
Trails or greenways	Corridors of open space or long distance trails.
Wildlife conservation (or management) areas	Significant wildlife habitat areas or sanctuaries (e.g., Audubon Sanctuaries)
Mountains	Mountain ranges (e.g., The Berkshires)
Forests	State, town, or private forest lands
Agricultural lands	Farm lands, orchards, vineyards
Historic or cultural sites	Buildings, landscapes, archeological sites
Parks and Golf Courses	Local or neighborhood parks, often in urban environments (e.g., playgrounds and totlots, basketball and tennis courts, baseball fields, soccer fields, and town commons); and golf courses.

These recreational categories were created based on the type of resource area necessary to accommodate the various recreational activities. Please note that while the last category, Golf Courses and Parks, may seem rather broad at first. It was based on the concept that these are recreation areas that require development in order to accommodate recreational activities. For a separate and more detailed analysis of which types of recreational activities were in demand, i.e. golf or soccer or playgrounds, please refer to Chapter 5: The Regional Perspective.

The Popular Outdoor Recreation Areas Statewide

Based on survey responses of how many day trips and overnight trips were taken in the last 12 months prior to the survey to sites in Massachusetts, the relative popularity of the outdoor recreation areas can be ranked. The resource areas experienced by most residents statewide (visitation rates higher than 30%) were:

- the coastal beaches and shorelines, with 61.5 % of respondents indicating visitation, and a projected usage of nearly 111 million person-trips annually;
- golf courses, parks, playground and tot lots were reported by 59.%; at 101 million person-trips per year, respondents also reported use of these facilities on a high frequency, relative to other categories;
- historic or cultural sites (50.4%);
- trips to lakes or ponds (46%);
- rivers and streams, (36.3 %);
- forests (31.4%); and
- greenways or trails (30.4 %).

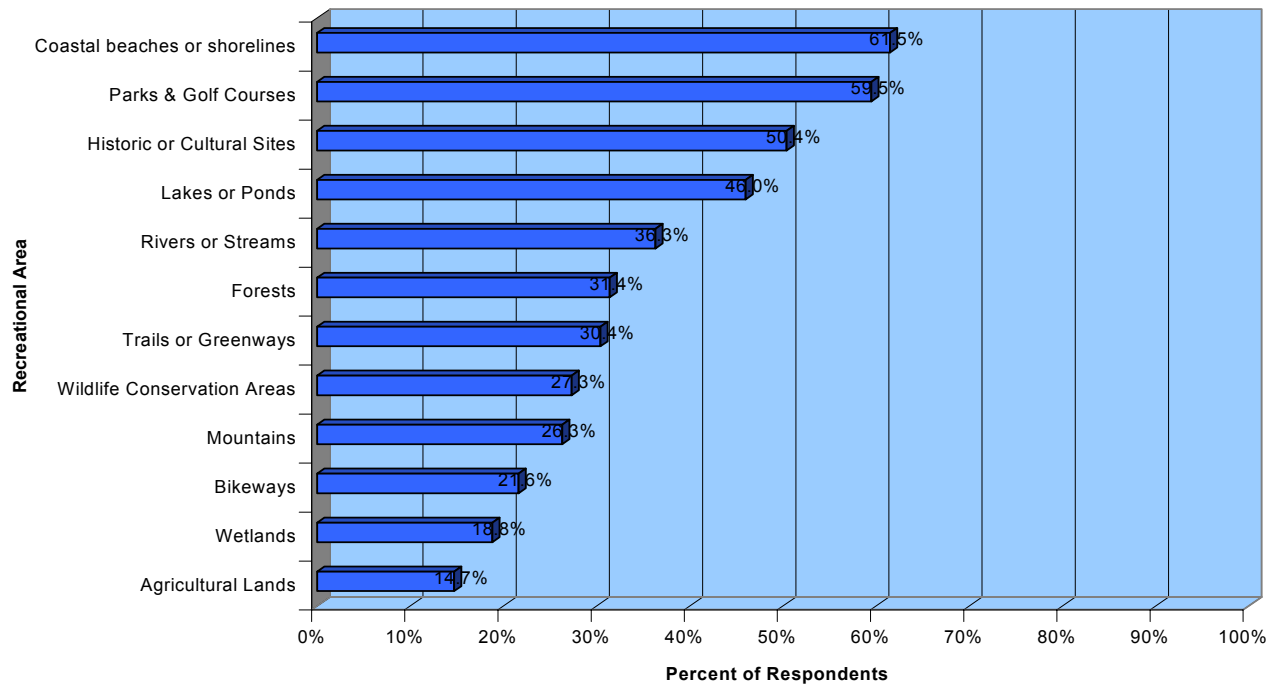


Figure 9. Statewide Experience with Recreational Areas

These percentages, representing the proportion of the population that has experienced these areas at least once during the last 12 months, is further refined in the table below. This table expresses a combination of both the frequency and number of visitors in a “projected” (inferred rather than a direct site count) number of annual visits. Note how the relative popularity of historical or cultural sites falls in rank order, while wetlands rise dramatically when expressed in this fashion, and how agricultural land areas and wildlife conservation areas reverse their rank order. Bikeways and mountain areas also reverse their rank order when total projected demand in days is computed.

Figure 10. Projected Number of Daily Visits to Recreational Areas *

Recreational Area	Average # Day Trips	Average # Overnight Trips	Total # Day Trips	Total # Overnight Trips	Average # Trips †	Projected Annual # of Daily Visits ††
Rivers or streams	8.16	1.37	11,676	1,959	10.87	50,711,492
Lakes or ponds	10.33	1.54	14,754	2,199	13.36	62,282,064
Coastal beaches or shorelines	15.88	3.98	22,716	5,697	23.79	110,925,292
Wetlands	5.23	2.28	7,488	3,268	9.78	45,605,872
Bikeways	4.02	0.06	5,758	86	4.14	19,284,286
Trails or Greenways	4.98	0.17	7,123	246	5.31	24,763,884
Wildlife Conservation Areas	2.13	0.12	3,047	168	2.36	11,001,474
Mountains	1.91	1.10	2,741	1,573	4.11	19,144,450
Forests	6.23	0.99	8,924	1,424	8.21	38,282,396
Agricultural Lands	2.86	0.85	4,093	1,225	4.56	21,277,754
Historic or Cultural Sites	4.22	0.23	6,030	334	4.67	21,781,812
Parks and Golf Courses	21.23	0.28	30,108	407	21.56	100,557,956

* Based on total sample regardless of whether the respondent visited the recreational areas or not.

† Each overnight trip is counted as two day trips.

†† Projections based on state population of individuals 18 years or older: 4,663,350.

Frequency of Visits to Recreation Areas

The frequency of usage varies across the types of areas as well. Typical median scores for yearly visits range from three to six (visits per year) across the types of resource areas. A few of the areas exhibit relatively high frequency of usage. For example, visitors to the collective category of golf courses, parks, playgrounds and tot lots report doing so a median of 15 times per year, the highest frequency of all the areas. Coastal beaches and shorelines, at 12 times per year median, are very popular destinations for repeat visits too. The least often visited recreation areas are the wildlife conservation areas and mountains, at a median of three times per year. Proximity appears to determine the frequency of visits.

These results must also be viewed with the Massachusetts context in mind. For example, visitors to the mountains may prefer out-of-state locations, such as the White Mountain National Forest. Also, the grouping of the resource areas into bundles of like facilities further influences the interpretation of the data, e.g. there are likely many more historic and cultural sites, or golf courses, neighborhood parks, playgrounds, and tot lots than there are bikeways, or even ponds in Massachusetts. Thus, the responses to this survey indicate current usage and perceptions, which reflect the relative availability and proximity of these resource groups as much as, or more than, the highest preferences (need). Need analysis is developed in Chapter 5.

Coastal areas are known attractions and need little explanation of popularity. Neighborhood parks are convenient and abundant, and consequently are heavily used. The high level of usage of cultural and historic sites might be explained both by their abundance in many Massachusetts communities, and by a high level of awareness among the public of what is historic, or possibly by state residents acting as hosts to out-of-state visitors who appear to have very high interest levels in the historic character of this region. As indicated in the discussion of regional results, the proximity and abundance of the resource within a given planning region can sometimes explain apparent preferences for resources. For example, preferences for bikeways are relatively low statewide (10th out of 12), but within regions where significant bikeways are located (Cape Cod and the Minutemen Trail, for example) preferences are much higher.

Activity Based Analysis of Recreational Areas

In addition to preferences for various recreational areas, survey respondents were asked to identify the specific activities in which they have recently participated. Thirty-eight (38) specific recreational activities were analyzed. The twelve activities most widely pursued (by more than 10 % of all respondents) in the state, in

rank order, were:

ACTIVITY	Percentage of Respondents
1. Walking	56.5 %
2. Swimming	54.6 %
3. Sightseeing, tours, events	54.0 %
4. Hiking	30.8 %
5. Fishing	26.5 %
6. Playground	26.1 %
7. Golfing	24.7 %
8. Picnicking	22.6 %
9. Watching Wildlife	21.7 %
10. Sunbathing	19.6 %
11. Road Biking	15.8 %
12. Mountain Biking	12.5 %

When these individual activities are grouped into the five general categories, we see that each of the Passive Recreation, Water and Trail-based Activities clusters have high participation rates (broad public use), while Field-based and Wilderness Activities, have lesser breadth of participation, implying a more specialized population interest.

Surprisingly, horseback riding and off-road vehicles reported extremely limited participation rates statewide. Consistent with prior SCORP reports, the implication of the activities participation rates suggest greater use of trail and water-based facilities, and wide distribution of and participation in “passive activities”, which are also non-field-based. Wilderness area use within Massachusetts is moderate (30% range), while the hard court element of field-based activities (such as basketball and tennis, and not including golf and playgrounds), although highly organized and visible, seem to account for little participation by statewide percentages. This latter finding may reflect, in part, that those under 18 were not directly surveyed here.

The next table is also important in showing the relative breakdown of activities within the composite resource group of Golf Courses and Parks, showing that the playground element is the dominant activity at 26%, with golfing close behind at 24.7%. Note however, that where these activities rank second statewide as a resource type or group, individually they rank sixth and seventh in the list of 38 specific activities.

Figure 11. Participation Rates in Activities at Recreational Areas †

		Percent of Respondents ††											
	Recreational Area	Rivers & Streams	Lakes & Ponds	Coastal Beaches	Wetlands	Bikeways	Trails & Greenways	Wildlife Conservation	Mountains	Forests	Agricultural Lands	Historic & Cultural Sites	Parks and Golf Courses
Activity													
Field-Based Activities													
Baseball		0.4	0.3	1.5	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	8.0
Basketball		0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.0	8.1
Football		0.2	0.2	0.7	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	2.1
Golfing		0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.8	0.0	0.0	0.0	36.4
Ice skating (rink)		0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Playground activity		0.2	0.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	38.1
Soccer		0.0	0.1	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.1	3.5
Tennis		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	3.2
Toddler activity (at tot lots)		0.2	0.1	0.5	0.0	0.3	0.2	0.0	0.0	0.5	0.0	0.0	7.7
Volleyball		0.4	0.7	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Passive Recreational Activities													
Photography / painting		2.3	1.4	1.5	3.1	0.0	2.1	3.9	2.3	3.4	2.2	5.1	0.6
Picnicking		12.7	18.1	8.6	1.3	5.2	6.2	5.8	8.3	9.2	3.9	1.2	7.7
Sightseeing, tours, events		9.9	3.9	7.4	17.0	2.0	5.5	18.1	19.0	9.2	22.3	81.3	3.4
Sunbathing		0.2	4.7	26.6	0.3	0.0	0.0	0.0	0.3	0.0	0.3	0.2	0.2
Watch wildlife, nature study		8.4	4.4	3.6	28.4	1.4	8.4	34.5	9.3	14.7	16.4	3.2	1.7
Trail-Based Activities													
Biking (mountain)		3.5	2.1	0.5	1.2	38.6	8.7	2.4	2.6	5.9	1.7	0.3	0.8
Biking (road)		1.9	0.9	0.9	0.0	55.0	3.2	0.6	1.7	1.2	0.3	0.0	2.3
Horseback riding		0.2	0.1	0.2	0.2	0.1	1.0	0.7	0.8	0.7	2.5	0.0	0.0
Off-road vehicle driving		0.3	0.1	0.3	0.0	0.0	1.6	0.0	0.4	0.5	0.1	0.0	0.0
Roller blading / skating		0.7	0.4	0.1	0.0	7.9	0.0	0.0	0.0	0.0	0.0	0.0	1.3
Running / jogging		1.0	0.2	1.5	0.0	1.4	2.7	0.4	0.2	1.6	0.3	0.0	2.0
Skiing (cross country)		1.2	1.2	0.0	0.0	0.0	1.2	0.7	5.8	1.4	0.8	0.0	0.7
Skiing (downhill)		0.8	0.4	0.0	0.3	0.0	0.3	0.0	22.7	0.6	0.0	0.1	0.1
Snowmobiling		0.0	0.7	0.0	0.0	0.0	1.5	0.0	0.8	0.3	0.4	0.0	0.0
Walking		30.7	20.0	34.0	44.9	15.4	56.4	46.4	20.6	42.5	22.2	18.5	16.7

Participation Rates in Activities at Recreational Areas (continued) †

		Percent of Respondents ††											
	Recreational Area	Rivers & Streams	Lakes & Ponds	Coastal Beaches	Wetlands	Bikeways	Trails & Greenways	Wildlife Conservation	Mountains	Forests	Agricultural Lands	Historic & Cultural Sites	Parks and Golf Courses
Activity													
Water-Based Activities													
		3.1	9.9	4.4	0.0	0.7	0.0	0.3	0.1	0.0	0.0	0.0	0.0
Boating (non-motorized)		6.0	8.1	3.0	1.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Canoeing, rafting		16.1	8.1	0.2	1.8	0.0	0.0	0.4	0.0	0.3	0.0	0.1	0.0
Fishing		43.7	33.9	9.1	2.2	0.4	0.0	1.9	1.7	1.8	0.2	0.0	0.0
Hockey (natural water bodies)		0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.3
Ice skating (pond, lake or natural water bodies)		1.2	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Sailing		1.0	1.8	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Surfing		0.0	0.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming		15.7	49.4	65.8	1.5	0.1	0.2	0.9	1.6	0.5	0.0	0.2	1.1
Water skiing / jet skiing		0.3	3.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wilderness Activities													
Camping		3.5	4.1	0.6	0.4	0.1	0.7	0.9	9.4	11.9	0.0	0.0	0.1
Hiking		14.7	7.3	2.2	19.4	1.9	41.1	26.6	51.2	40.5	5.2	1.7	1.6
Hunting		1.0	0.9	0.2	4.7	0.0	0.8	4.5	1.4	4.5	2.1	0.0	0.0

† Based on respondents who indicate that they have visited recreational areas in the last 12 months.

†† Percents may not equal 100 due to multiple response.

Chadwick, Martin Bailey, Inc. for SCORP

The relationship between activities and the resource at which they occur are, for the most part, logical. For example, camping takes place most often at forests, mountains, and trails, while fishing and swimming most often occur at lakes, rivers, and coastal beaches. Other findings may not be as expected, however. Swimming is most common at coastal beaches, less common at lakes and ponds, and much less common in rivers and streams. Perhaps this is a function of the density of people in the coastal region or a lack of swimming access points at inland resources. Certainly for rivers and streams, the force of the water's current and water quality is a concern, not always conducive to swimming safety.

We also find that fishing is largely an inland resource activity. Perhaps this results from poor access to coastal resources or is simply a reflection of the local nature of fishing. That is, people don't want to travel far to participate in the activity. Motorized activities (including off-road vehicle driving, snowmobiling, water skiing, and jet skiing) were found to have fairly low participation rates, in contrast to the size of the conflict that has arisen in some areas.

Location Preferences

The location of the recreation area people choose varies depending on the resource type. Overall, people are slightly more likely to recreate in a town other than their own, but the tendency is slight. Wetlands and agricultural lands are the two resources most commonly located on the respondents' own property. Recreation areas most often located within the hometown of the respondent included wetlands and neighborhood parks. People travel out-of-town most often for recreation opportunities when the resources involved have restricted ranges such as mountains and coastal beaches.

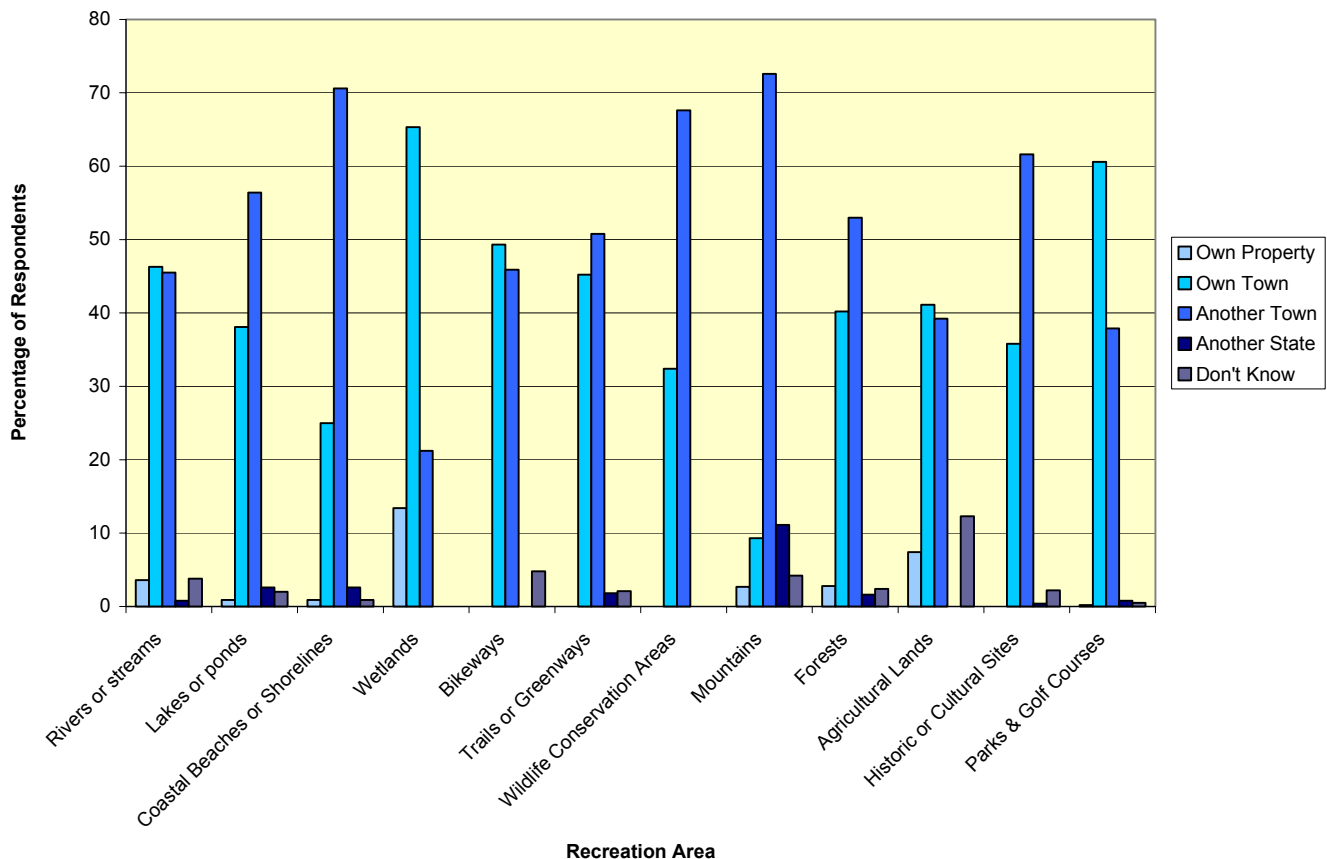


Figure 12. Location of Recreational Area Most Frequently Visited

Travel Patterns and Recreation

Distance traveled is another measure of demand. Substantial numbers of respondents recreate within their own towns. A typical example is that 45% of visits to trails and greenways were made within the respondents' own towns. However, as might be expected, nearly three-quarters (71%) of all trips to coastal

beaches and shorelines were made to other towns. A notable finding is that 13% of visits to wetlands takes place on the respondents' own property. Only one in five (21%) of respondents traveled outside their own town to visit wetlands. Also not surprising, trips to golf courses, neighborhood parks, playgrounds and tot lots are primarily (61%) a local affair. This last figure would likely increase if golf courses were not included in this group.

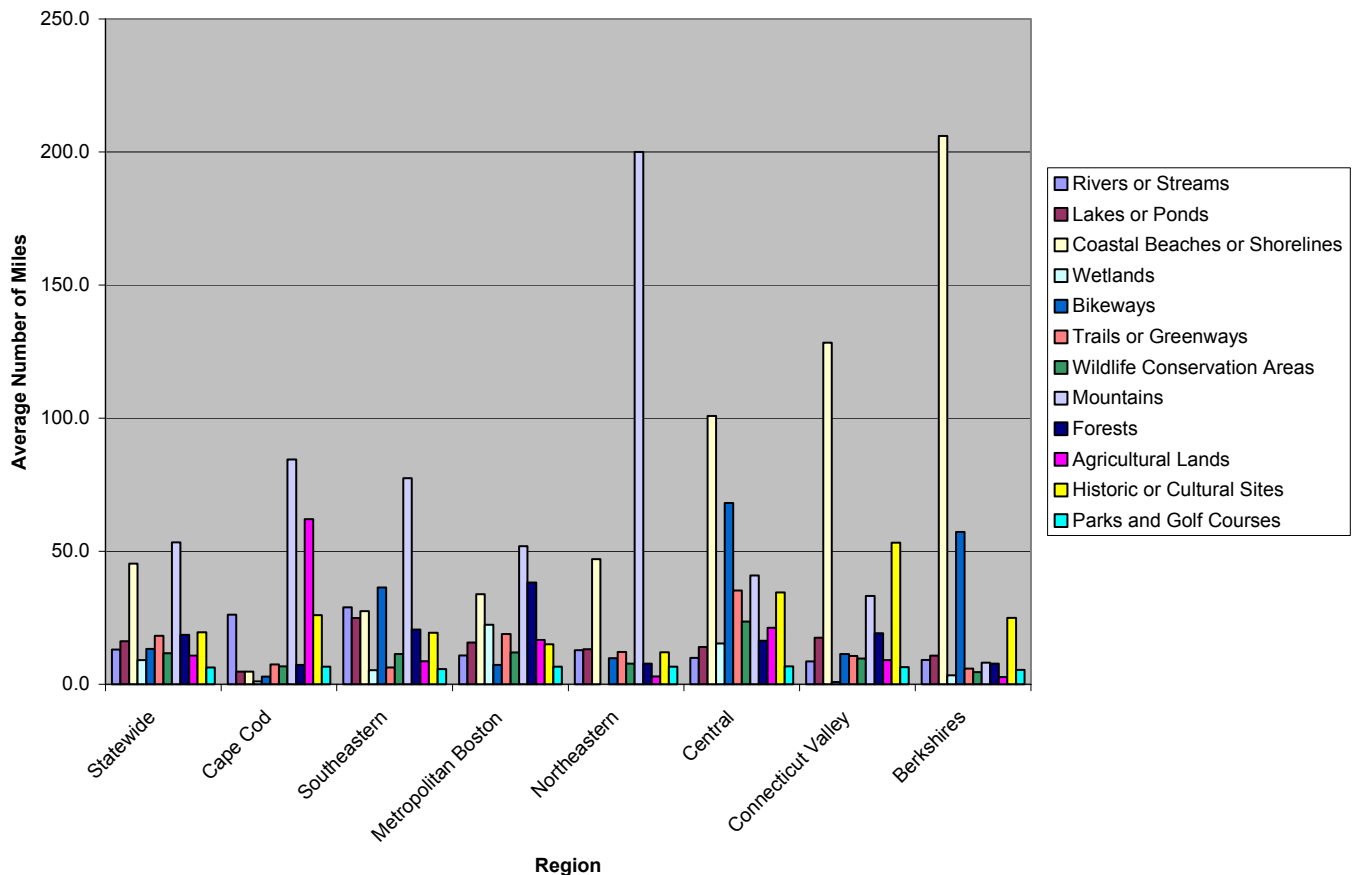


Figure 13. Average Number of Miles Traveled (One-Way) to Recreational Areas by Region

Popular resource destinations that have limited geographic distributions have higher mean travel distances. For example, mountains are concentrated in the western part of the state and beaches in the east, resulting in higher mean travel distances for the majority of visitors. Trails or greenways, forests, and historic and cultural sites are among those with moderately high mean travel distances. This may be explained by the appeal of "major" resources that are well-known areas such as the Appalachian Trail, Savoy State Forest, or historic sites of Boston. People prefer such major resources to more local resources and those resources often require moderate travel distances.

Average number of miles traveled indicates both the availability of a resource within a region (e.g. people from the Berkshires must travel a long distance to visit coastal beaches) as well as satisfaction, but may also indicate dissatisfaction with existing resources or a lack of information about them. An excellent example of this latter point is found in the Metropolitan Boston Region, where the average number of miles traveled to coastal beaches is 33.9, despite a number of beaches that exist within shorter distances. The obvious explanation is the poor reputation of the Boston area beaches and Boston Harbor. However, other factors than cleanliness and maintenance, such as crowding and simply the desire to travel outside of the city, may contribute to a greater or lesser degree. Respondents from Cape Cod and the Islands report traveling fewer miles to enjoy most types of recreation areas.

Respondents who indicated they traveled over twenty miles to a resource were asked whether they were aware of closer sites. Over 40% of respondents indicated they knew of closer sites for neighborhood parks, agricultural lands, wildlife conservation areas, and coastal beaches. For all other resources, less than 30% of respondents indicated any knowledge of closer sites. We can infer little from this statistic, as respondents generally did not respond to the follow-up question: Why did you not use a closer site? The few responses recorded, however, indicated that habit is the greatest driver of recreation choice, as well as the condition of alternative sites. Respondents felt that other sites were less well maintained than the resources they visited.

Mode of transportation was most often automobile (56%), however, a number of exceptions were noted. Mass transit was a factor in transportation to historic and cultural sites, with 24.8% of respondents indicating it as their primary method of transport. This is probably a result of the high concentrations of historic sites in the urban areas of Massachusetts, where public transportation is available. Yet, even Metropolitan Boston respondents use mass transit to a significant degree (39%) only when visiting these types of resources.

Predominantly local resources, such as wetlands and neighborhood parks, and, to a lesser degree, rivers and streams, are often accessed by foot or bike. Resources with restricted ranges, such as mountains and coastal beaches, are the resources most commonly visited by automobile.

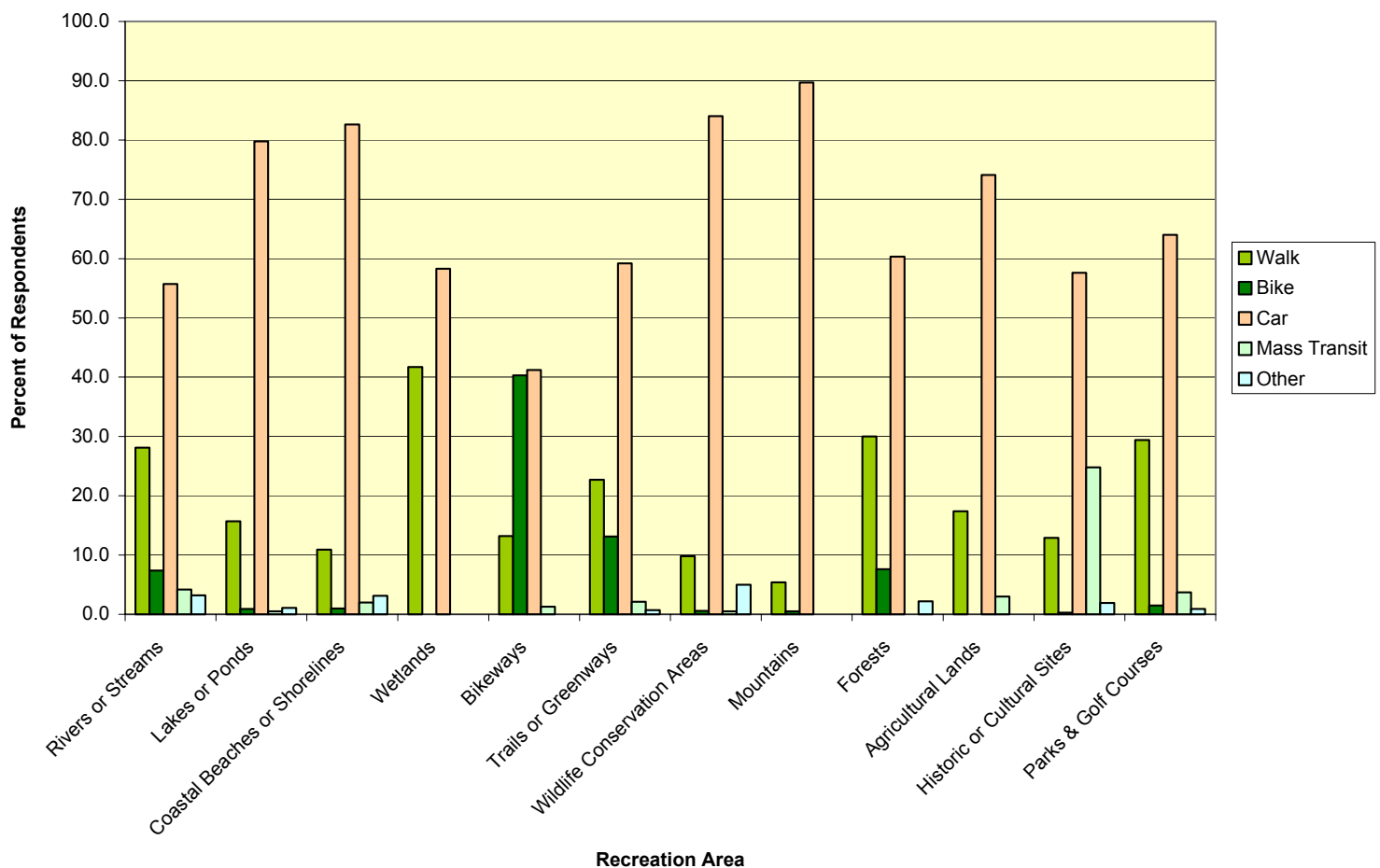


Figure 14. Primary Method of Transportation

Individual versus Group Preferences for Resource Types

Differences were noted between resources in terms of their appeal as an individual or a group pursuit. Lakes and ponds, historic and cultural sites, and golf courses and neighborhood parks were visited by an average group of nearly four people. This is in contrast to bikeways, wetlands, and wildlife conservation areas, which

were visited by groups of two or less. Of all resources categories studied, bikeways and rivers or streams were most often used by individuals alone.

Ownership

Ownership of recreation resources illustrates which providers are most heavily relied upon for resources and recreation activities. Public agencies are the largest providers of open space and recreation. One exception is agricultural lands, which are not commonly owned by public agencies. (Although the Commonwealth has invested over \$30 million in Agricultural Preservation Restrictions, the fee simple ownership of these lands remains with the private landowner, typically the farmer.)

Among public entities, people rely on the state for more large scale resources such as mountains (66.6 %), forests (57.4%), wildlife management areas (62.4%), trails and greenways (65.8%) and rivers (45.1%), while municipalities most often provide neighborhood parks, historic sites, bikeways, coastal beaches, and lakes and ponds. Private entities also provide significant resource and recreation opportunity. The federal government is most prominent in addressing historic and cultural sites, and to a significantly lesser degree, wetlands and mountains.

In some cases, such as trails and greenways or wildlife conservation areas, it is the private nonprofit areas that people use most often. For-profit private entities are most prominent in lakes and ponds (26%), historic and cultural sites (15%), and golf courses, neighborhood parks, playgrounds and tot lots (31%), the latter figure principally driven, of course, by the golf course component.

For both public and private ownership, a significant number of people did not know who owned the site they visited, pointing out a need for improved education and information.

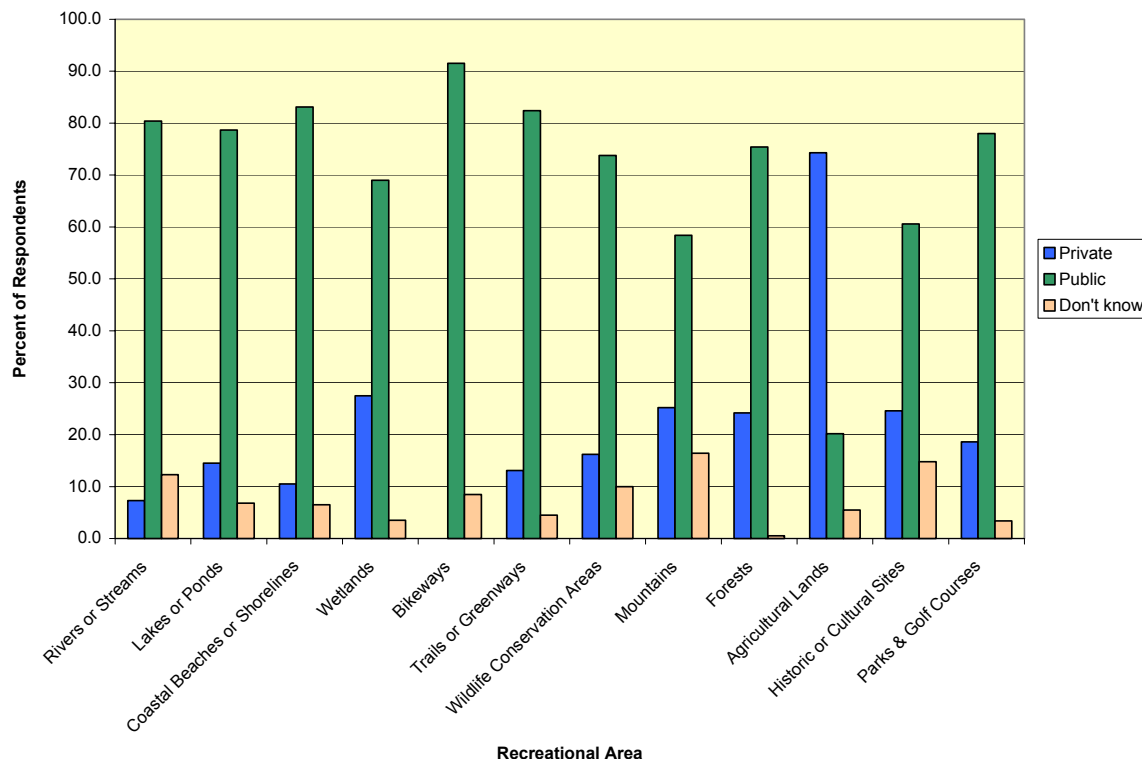


Figure 15. Ownership of Recreational Areas Most Frequently Visited

How People Learn About Recreation Resources

Finally, respondents were asked how they obtain information on new recreation areas. Family, friends or word-of-mouth were the most important sources, followed closely by information from newspapers.

Television and radio, magazines, and guidebooks and maps were also noted, but were much less significant. This finding is of major significance to recreation providers who wish to reach out to a broader market. Few public agencies, for example, use newspaper outlets to publicize their facilities. Of course, many public facilities are already at or over optimal use levels (see 1988 SCORP, Volume One, pg. 66). However, for those lesser number of facilities, public and private – or for disadvantaged populations, special events or fund raising – where greater use is encouraged, this finding merits note. (It is also important to realize that this study was completed in 1995, well before today's more widespread use of the Internet and World Wide Web.)

Demographic Differences

Age

Among demographic groups, significant differences in resource preferences are apparent. Age plays a major role in resource usage, as seen by consistent declines in usage of all resource types as age increases. Preferences for resources remained remarkably consistent between age groups; the most popular among the youngest are also the most popular among the oldest. Level of use, however, shows decline with increasing age.

One interesting inversion occurs with the 18-44 age groups where golf courses, playgrounds, neighborhood parks and tot lots surpass coastal beaches as the most favored activity, but in the over 65 group, declines to third in rank below both coastal and historical, sightseeing and event resources. The popularity of lakes and ponds rises to second rank among 35-44 year olds.

People in the 35 to 44 age category represent the peak of the use curve. The highest usage of most areas occurs in these groups. People in this range are still active and may recreate more due to the recreation demands of their families. Implied in these high use numbers may be the presence of young (pre-teen) children in these households. A typical example is the experience level for rivers and streams, where 48% of respondents age 35-44 report having visited them in the last 12 months, compared to 36% of the statewide population.

Close behind this demographic group in high recreation participation rates is the 25-34 age bracket, representing singles and young married couples who have maximum personal mobility but are still relatively low on the income curve. Over the age of 44, usage drops off steadily and we find the lowest usage among those over the age of 65.

There are few clear patterns of frequency based on age, especially when viewing median scores. A few points do merit particular mention. First, respondents from the over 65 group tend not to visit bikeways at all, but tend to use trails and greenways more than the other groups (8 times versus the statewide median of 5). Secondly, both the 25-34 and the 35-44 age groups use golf courses, neighborhood parks, playgrounds and tot lots much more frequently (20 times) than the statewide median.

Other demographic factors revealed generally predictable results. Activity usage among different age groups, as is true for resource use, seems to peak between the ages of 25 and 54. Participation rates among the youngest group (18-24) tend to be lower for more traditional recreation activities such as walking or nature study, and higher for more active and current activities such as mountain biking. The oldest age groups (55-64 and over 65) tend to have lower participation rates for most activities. Traditionally male activities such as hunting, fishing and a number of field sports were found to have higher participation rates among men, and family-oriented activities such as picnicking, playground, and toddler activities were found to be significantly higher for women.

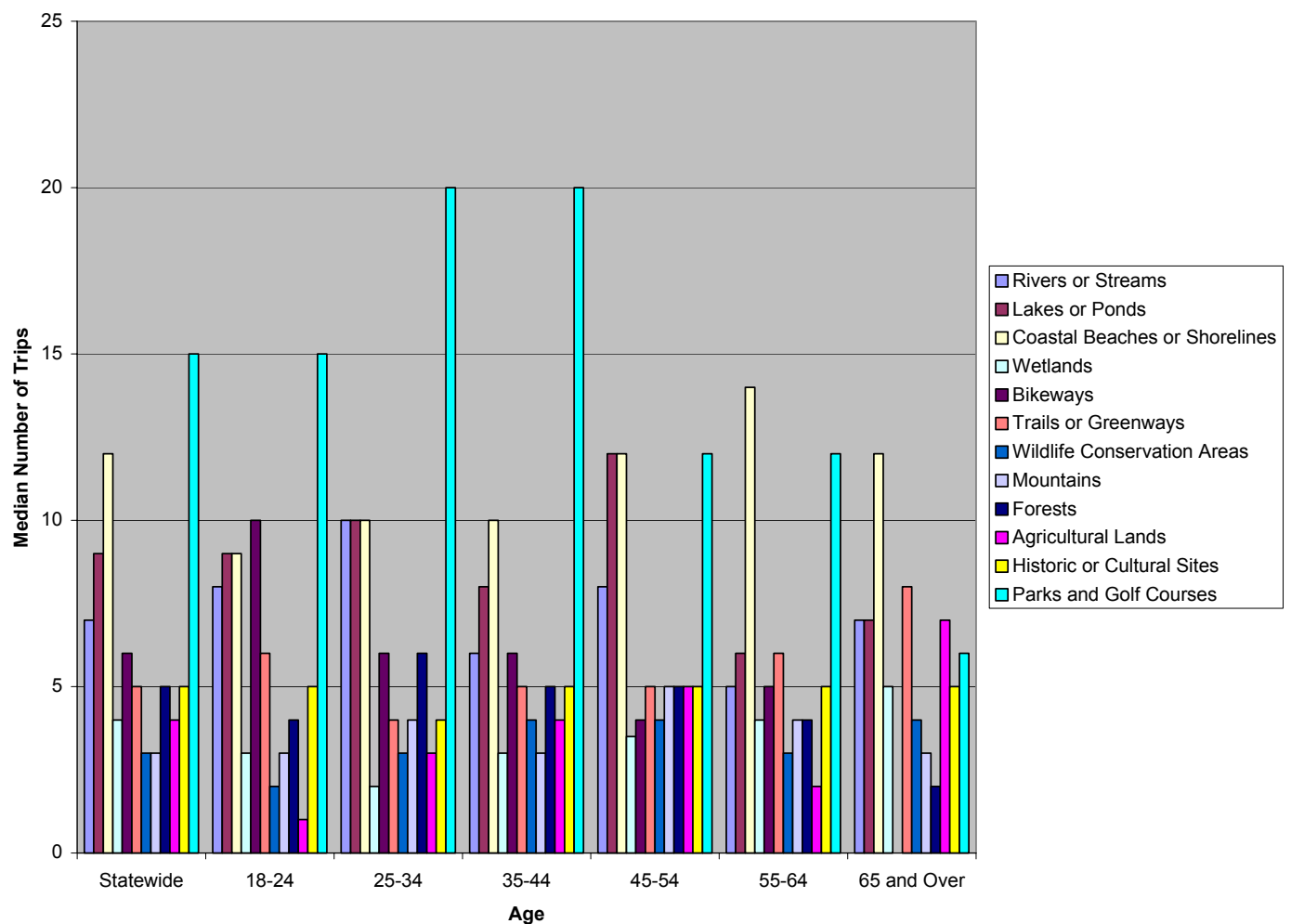


Figure 16. Median Number of Trips to Recreational Areas by Age

Race

Race has a very strong impact on recreation use. African-Americans have significantly lower use patterns of all resource types, except neighborhood parks and golf courses. Higher use of neighborhood parks may be explained by the fact that eighty-eight percent of African-American respondents were from the urbanized Metropolitan Boston area, where local parks are abundant. Among Hispanic respondents, resource use was significantly different than statewide averages for six of the twelve resource categories.

For many types of recreation areas, whites report higher visitation levels than do African-Americans, Hispanics or other races. For example, whites who visit lakes and ponds report making 10 visits per year, while the figure for African-Americans is 4. For Hispanics, the frequency of visitation number is comparable to that for whites for rivers and streams, for mountains, and for historic and cultural sites.

The cause of differences in recreation use between racial groups is speculative. Considering that the majority of non-white respondents were from urbanized areas, which tend to have more restricted access to non-urban resources, physical barriers do play some role. So perhaps does the absence of exposure to new geographic areas (owing to access barriers) and new activities outside of individual or cultural experiences. Income is also a likely contributing factor to the amount of available leisure and access.

Differences between racial groups can primarily be attributed to the characteristics of the region in which most non-white respondents reside, the highly urbanized metropolitan Boston area. This observation is not intended to minimize the differences between racial groups, but rather to offer some insight into reasons for the differences. Participation rates among both African-Americans and Hispanics are significantly higher than statewide (or white) rates for field-based sports such as basketball, football, and soccer. Participation rates are significantly lower for many water-based activities and a number of passive activities. Proximity to resources is most likely a key factor here, as these respondents are choosing activities that are readily available in the urban community and are not choosing resources that are in shorter supply or that may be more difficult to access.

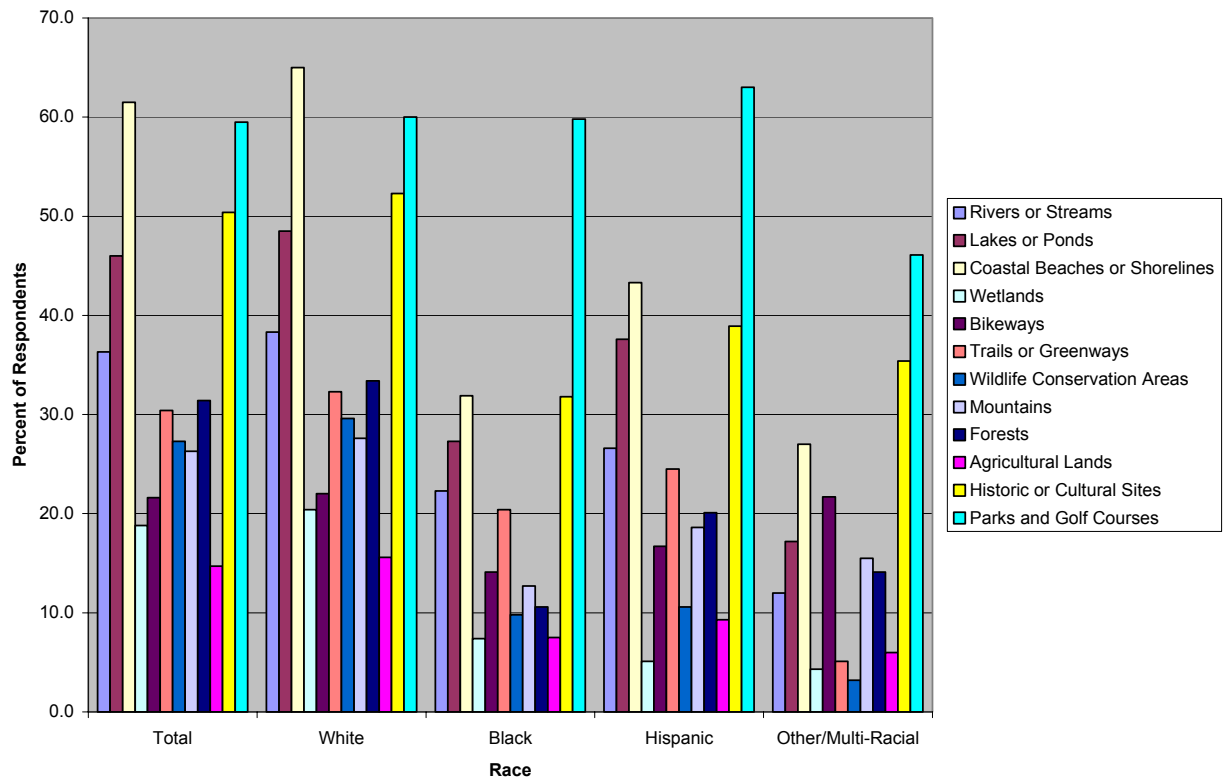
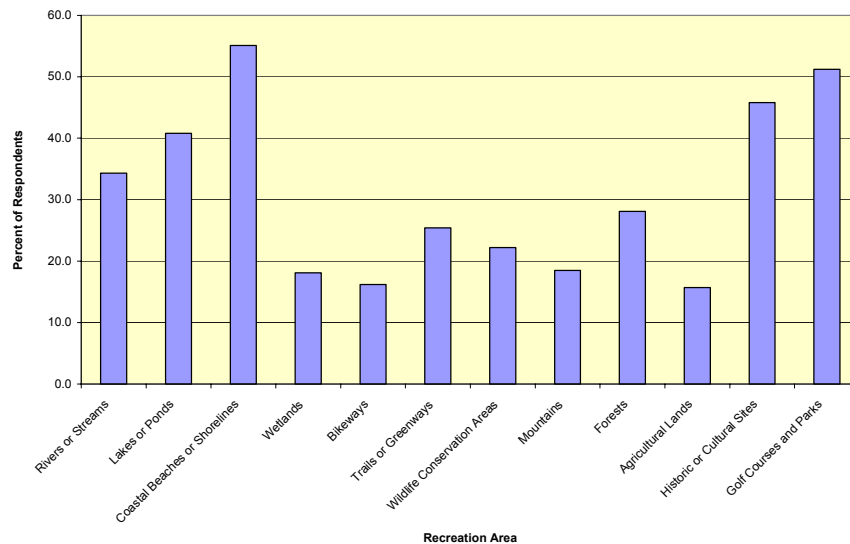


Figure 17. Recreation Area Use by Race

Disability

People with disabilities or households having a disabled person made up approximately 20% of the survey population; results of their resource usage show significant differences (lower use) only for golf courses, neighborhood parks, playgrounds and tot lots, mountains, and bikeway. Lower usage of mountain resources may be expected, as these are among the most difficult resources for the disabled to access as well as for the managing agencies to modify for their use. Significantly lower use of bikeways and neighborhood parks may be a result of inadequate modifications for the disabled, lack of knowledge of existing accessible sites, or inadequate access to the sites. Frequency of visitation rates are similar to the



statewide averages also.

Figure 18. Recreational Area Use by People with Disabilities

Disabled respondents showed significant differences with statewide participation rates for one activity only, golf. This finding is interesting when compared with resource use by the disabled. Resource use is significantly lower among the disabled for several resources, while activity use is lower for only one area. Perhaps this difference reflects the flexible nature of activities; that is, they can be pursued at a variety of resource areas.

Employment Status

Finally, employment status was examined. Students were found to have generally lower rates of participation in most activities. This may reflect the age of the group (as discussed, younger people tend to give lower participation rates) or limited time for recreating due to the demands of student life.

Support for Future Investments

Finally, there is a high level of support for future recreation investments. At least 70% of Massachusetts' residents surveyed favor further funding for nine different types of programs. Strong support for improvements to and maintenance of existing sites is indicated, as well as the need for further acquisition of new sites.

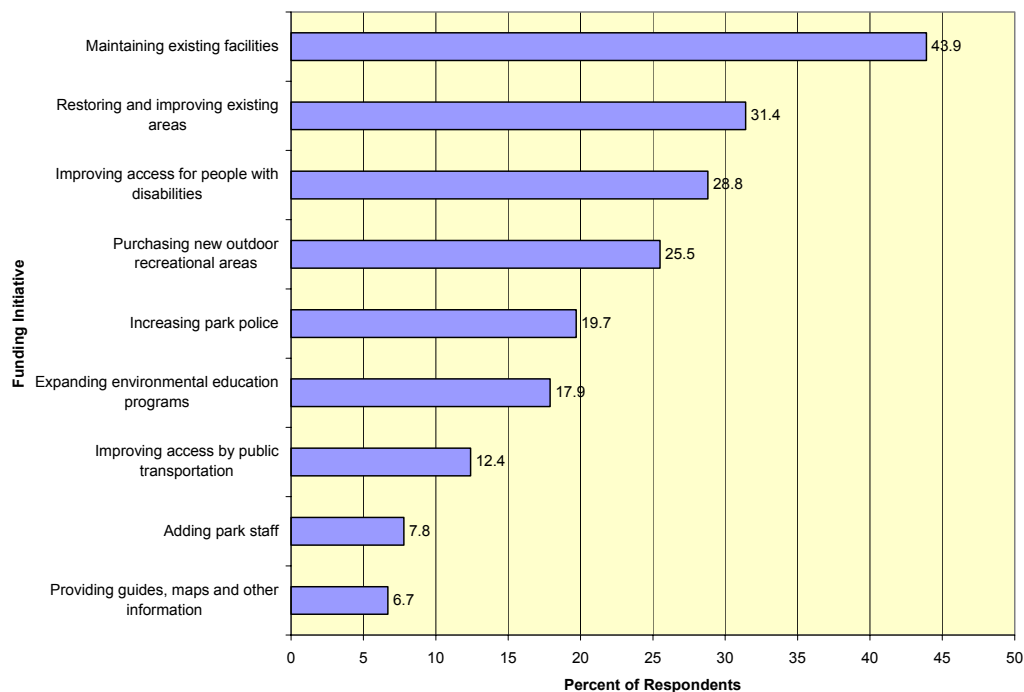


Figure 19. Statewide Preference for New Funding Initiatives

Regional Demand Patterns

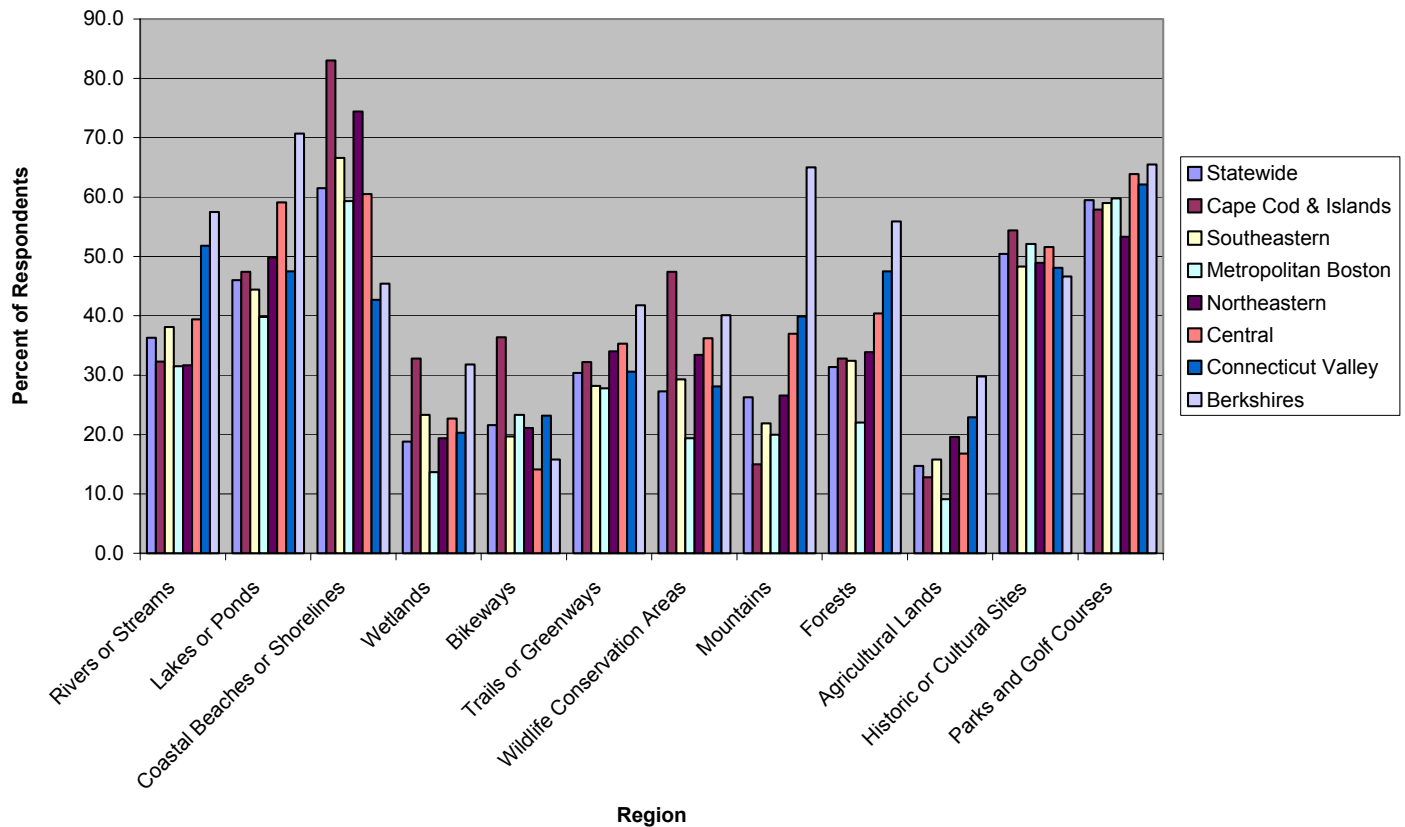
Regionally, we find similarities in the most popular activities, but do notice differences in the relative level of popularity (i.e., the order of popularity is the same, but the level of participation is different). It is interesting to note that skiing participation rates are highest in a region with the lowest availability, the Southeastern. It is also interesting to note that participation rates for tot lots within the Metropolitan Boston Region are second lowest overall, even though tot lot facilities are most abundant in that region.

Baseball is significantly less popular on the Cape and Islands, but quite popular in the Northeastern and Connecticut Valley Regions, compared to the statewide results.

Cross-country skiing is significantly more popular in the Berkshires than in the Commonwealth as a whole. Sunbathing is significantly less popular in the Connecticut Valley Region than elsewhere. Road biking,

roller-blading and skating, and running and jogging are all significantly less popular among residents of the Berkshires than statewide. Boating, fishing, and swimming are significantly less popular among residents from Metropolitan Boston.

Figure 20. Experience with Recreational Areas by Region



In terms of resource use, the use of coastal beaches is significantly higher on the Cape and Islands at 83% than other regions, followed by high rates in the Northeastern and Southeastern Regions. Reported experience with coastal resources is obviously low in the Berkshire and Connecticut Valley. However, the attraction of lakes and ponds is stronger than in other regions by far in both the Berkshires and the Central planning regions, at almost 71 and 59 % respectively, versus a statewide average of 46%. The use of rivers and streams are most striking in the Connecticut River Valley Region (51.8%) and the Berkshires (57.5%).

In one of the more striking regional patterns, the reported experience levels of both wetlands visitation and wildlife conservation areas was highest on the Cape and Islands and the Berkshires. This observation tracks well with the reported occurrence of the highest quality of these resource areas in “Our Irreplaceable Heritage”. A very different type of resource, i.e. bikeways, was also strongest on the Cape, while the closely related trails and greenways category stood out in the Berkshires. Notably, the lowest experience rates with biking occurred in the Central Region, although trails and greenways were strongly noted there.

Resource use is significantly less in the Metropolitan Boston Region than elsewhere across the state for half of the resource types, including lakes and ponds, wetlands, wildlife conservation areas, forests, mountains and agricultural lands. However, the converse is true with respect to bikeways. Much of this observation can be attributed to the small land area and high level of development of the region, which restricts the amount of open space, scope of the local resources, and access to recreation areas and facilities.

Use of mountainous areas within Massachusetts is highest, for obvious reasons, in the Berkshire Region, but also higher than average in the nearby Connecticut Valley and even the Central Region, while quite low on the Cape, in the Southeastern and Metropolitan Boston. The Northeastern Region was near the average value in this respect, bucking the clear proximity patterns of the rest of the eastern regions. Both forest and agricultural resources had the same regionally high experiences, but much less variation at the low ends where only the Metropolitan Boston Region stood out. The Central Region had less agricultural experience than one might expect, and the Northeastern Region somewhat more than expected.

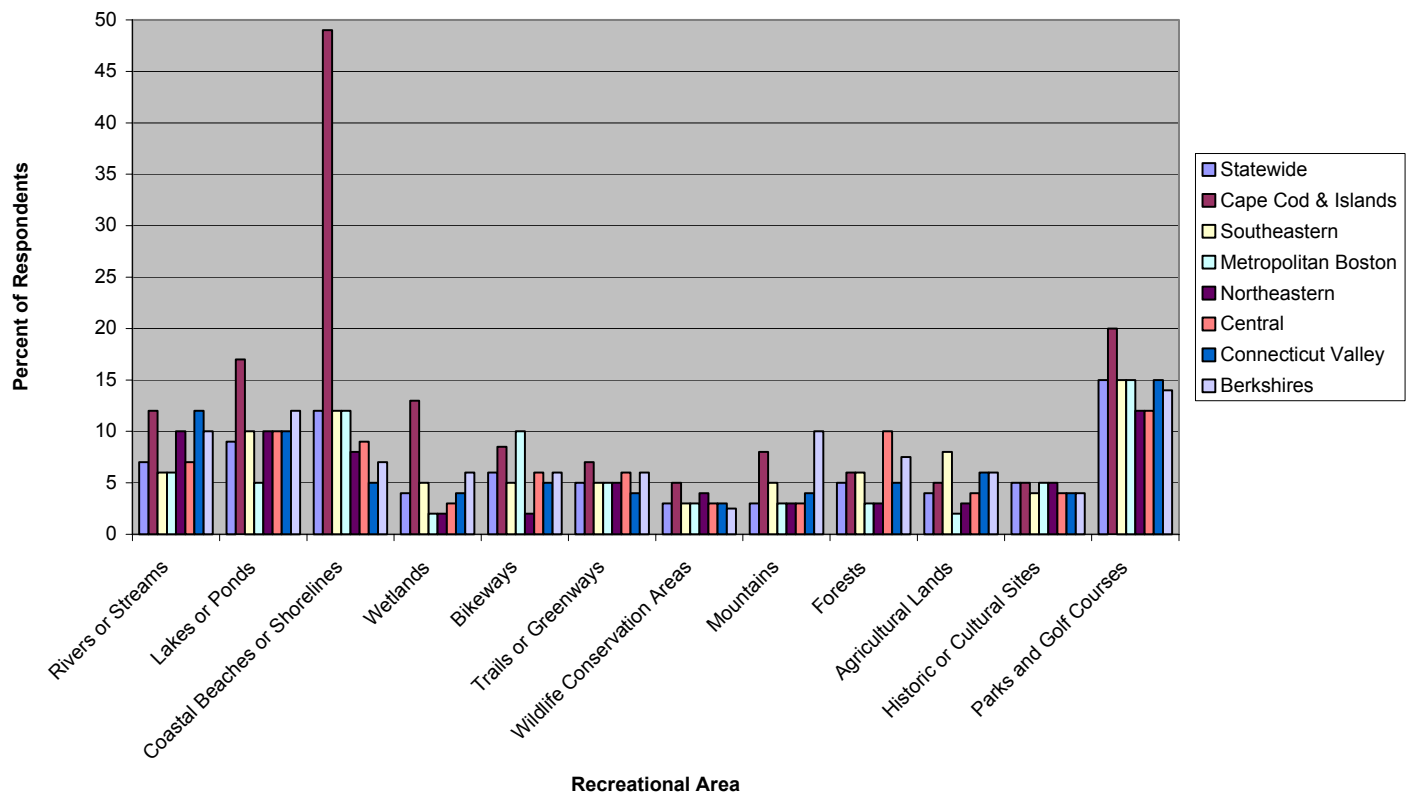
It is also interesting to note that the experience levels by resource types in the Berkshires depart more widely from average values than in other regions, with virtually every resource category being either statistically significant in difference, or notably high or low as an absolute value.

Perhaps one of the most interesting observations proceeding from analysis of the data on Experience Levels is that historic and cultural sites, and golf course, neighborhood parks, playgrounds, and tot lots show a very narrow range of variation from one region to another. This point suggests that the built environment has a more even distribution of resources than the natural environment.

The frequency of visitation patterns by region shows very similar peaks and valleys to the experience levels (proportion of all respondents). The variations that crop up include:

- higher frequency of trips to rivers and streams on the Cape and Islands and in the Northeastern Region than the previous experience levels would suggest;
- the same for lakes and ponds, with the addition of the Central Region and Southeastern Region;
- a higher frequency of coastal visitation by Metropolitan Boston and Southeastern residents than in the Northeastern Region;
- a much higher frequency of wetlands visits by Cape residents than any other region;
- a lower frequency of bikeways use in the Northeast;
- a more even distribution of trails and greenways and wildlife conservation areas use;
- a higher median number of trips by Cape and Island residents, and to a lesser extent, Southeastern residents to mountains;
- the highest frequency of use of forests being in the Central Region, rather than in the western regions;
- the highest frequency of agricultural visits being by Southeastern residents; and
- the highest frequency of use of golf courses, neighborhood parks, playgrounds and tot lots being on the Cape, perhaps skewed by the especially long golf season there.

Figure 21. Median Number of Trips to Recreational areas by Region



Stemming from proximity, other notable patterns include residents of the Cape and Islands who visit coastal beaches and shorelines do so a median of 49 times per year, compared to the statewide median number, 12; respondents from the Berkshires who visit mountains 10 times per year, compared to the statewide median of 3; and the higher general frequency of use of all types of recreation areas by residents of the Cape and Islands.

The same information expressed more specifically by individual regions follows in Chapter 5: The Regional Perspective.

Profiles of Resource Users

Findings pertaining to the demographic and behavioral aspects of respondents who report using the 12 types of outdoor recreation areas were compiled to develop profiles of users for each type of recreation area.

Rivers and Streams

The typical visitor to rivers and streams does so with another person a median of seven times a year. They travel by automobile an average of 13 miles one way to the sites. They are more likely to be from the Connecticut Valley or the Berkshires than from other regions. The most common activities pursued at rivers and streams are fishing, walking, canoeing or rafting, hiking, and swimming. Users are much more likely to be white than African-American or Hispanic. Respondents from households with disabilities are somewhat less likely than whites to visit rivers and streams.

Lakes and Ponds

These natural resources attract users from all regions, although significantly more from the Berkshires. Users typically drive in groups of three around 16 miles to the sites and visit nine times per year (median) and most often swim, fish, and have picnics. Other popular activities are walking and motor boating. Visitors are much more likely to be white than African-American or Hispanic. They are somewhat less likely to come from households with disabilities.

Coastal Beaches and Shorelines

These are the most popular recreation areas. Respondents travel the miles necessary to reach them, with the average across the state being 45 miles one way. People report visiting them a median 12 times per year, typically in groups of three. Over eight in ten users travel by automobile to reach these sites.

Swimming is mentioned by two-thirds of those who frequent these sites, compared to one-quarter who mentioned sunbathing. Over one-third mentioned walking as an activity enjoyed here. Whites are twice as likely to experience these areas than are African-Americans, and somewhat more likely than Hispanics or those from households with disabilities.

Wetlands

Those who visit wetlands travel an average of nine miles one way on a state-wide basis, but that figure is skewed by respondents from the Metropolitan Boston Region, who report traveling 22 miles on average to the sites. Over four in ten respondents walk to visit wetlands. Walking is mentioned most as the activity enjoyed at wetlands, followed by watching wildlife and nature study. Three in four visitors go with another person, typically four times (median) per year. Whites are three times as likely as African-Americans to visit wetlands, and seven times more likely than Hispanics. Households with disabilities are slightly less likely to visit wetlands than are whites.

Bikeways

Those who use bikeways travel to them by either bicycle or automobile a median of six times per year, to sites within their own town or to another town within 13 miles. While bikeways are used by all ages, younger people tend to dominate the bikeways. Road biking is mentioned by over half the users followed by mountain biking at nearly four in ten. Walking is mentioned by 15%. Whites are more likely than African-Americans, and much more likely than Hispanics, to use bikeways.

Trails and Greenways

Visitors to trails and greenways make a median of five trips there per year. Most drive the 18 miles one way to the typical site; four out of five visitors go in groups of four or more. While popular among all age groups, users are more likely to be in the 18-24 age range, and under 45. Visitors walk or hike at the sites. African-Americans are less likely to use trails and greenways than whites, Hispanics, or people from households with disabilities.

Wildlife Conservation (or Management) Areas

The typical visitor travels by car a median of three times a year, with another person to an area located roughly 12 miles away in another town. Visitors, who are more likely to be in the 35-44 age group than not, tend to walk, watch wildlife or study nature. They also hike, or do sightseeing, tours or events at the sites. Visitors are much more likely to be white than any other ethnic group.

Mountains

These natural resources, just as coastal areas, are not geographically dispersed. Respondents report traveling by automobile a median of three times per year to mountains that are located a median of 53 miles away. The typical visitor travels in a group of three or four people. They most often report hiking, downhill skiing, sightseeing, tours, and events, and walking. They are twice as likely to be white as African-American, and 50% more likely to be white as Hispanic. Less than one in five respondents from households with disabilities report visiting mountains in the last year.

Forests

Forty percent of those who visit forests do so in their own town, likely walking or riding a bike to the sites. Most others drive to a nearby town. Visitors report taking a median of five trips per year to forests, mostly in groups of two or three people. Walking and hiking are the dominant activities, although watching wildlife and nature studies are also popular. Whites are three times as likely as African-Americans to visit forests. Households with disabilities experience forests nearly as much as the general population.

Agricultural Lands

The typical visitor to agricultural lands travel by car 11 miles to a site a median of four times per year, in groups of two to three people. Sightseeing, tours, and events, followed by walking then watching wildlife and

nature studies are the most often mentioned activities at agricultural sites. Whites are twice as likely as African-Americans to visit agricultural lands. Households with disabilities are just as likely to visit these areas as the statewide sample.

Historic and Cultural Sites

Visitors to these sites tend to travel by car or mass transit to another town 20 miles some five times (median) per year. Visitors tend to go in comparatively large groups of four to five people. Four in five visitors most often attend sightseeing, tours or other events, and another one in five visitors walk on the grounds. Whites are more likely than African-Americans or Hispanics to visit these sites. Households with disabilities are nearly as likely as respondents statewide to visit these areas.

Parks and Golf Courses

These sites are nearly as popular statewide as beaches and shorelines. they are used primarily for playground activities and golfing, and to a lesser extent, walking. Respondents tend to use the facilities within their own towns. However, most travel by car the average distance of six miles. These facilities are used often; respondents report using them 15 times per year (median). Most respondents report going in groups of around four people. Usage is fairly consistent across racial groups at 60%. Households with disabled people trail at 51%.

Satisfaction and Dissatisfaction Levels

Statewide, residents are largely satisfied with the resources they use, particularly with mountains and historic and cultural resources. Despite the results for cultural and historic sites, satisfaction tends to be lower and dissatisfaction higher among the most heavily used resources. This finding most likely reflects frustration with problems that may arise when there is a high concentration of recreation users in an area. Satisfaction and dissatisfaction seem to be driven by the same factors, which in order of importance by users are attractiveness, cleanliness and maintenance of resources.

Figure 22. Top Reasons for Satisfaction with Recreational Areas

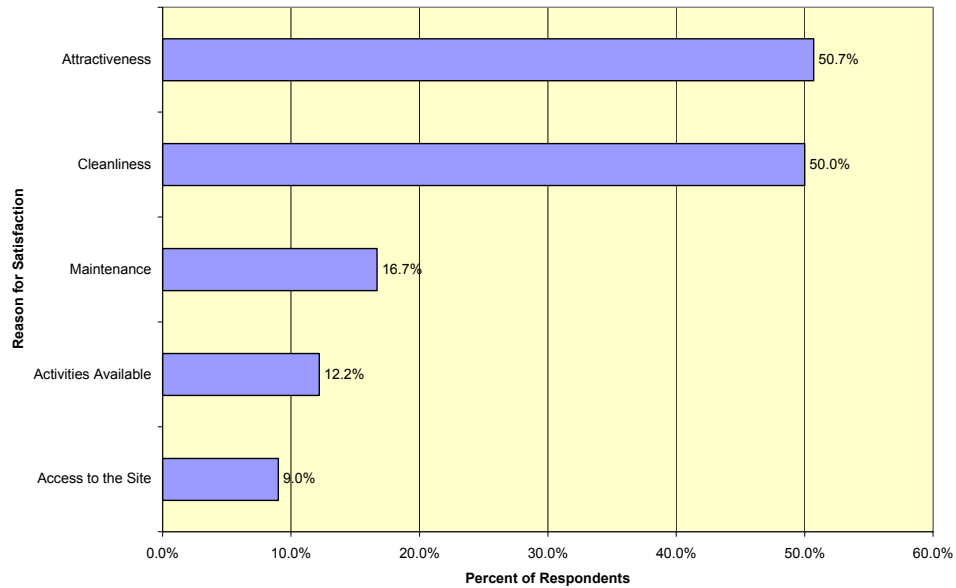
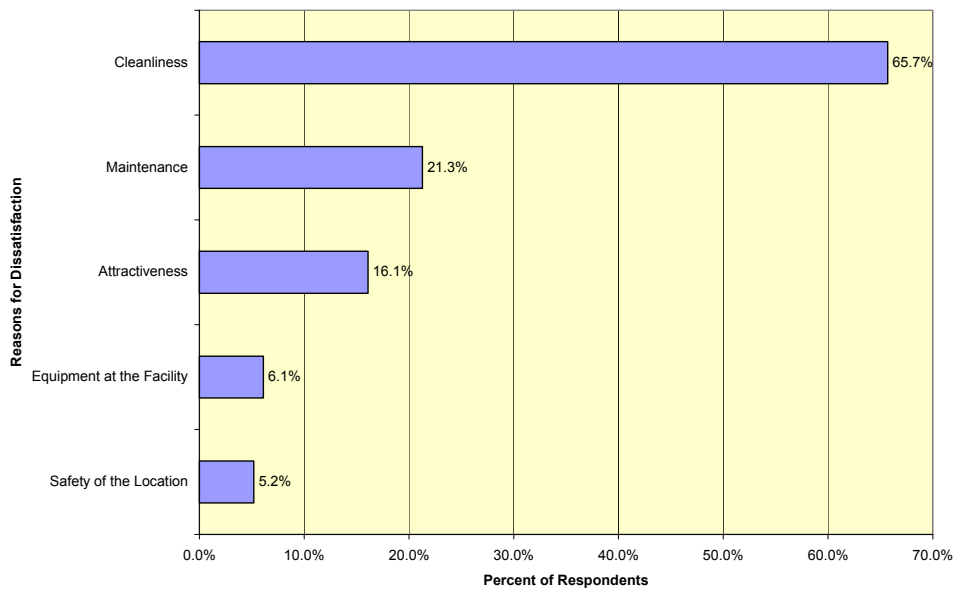
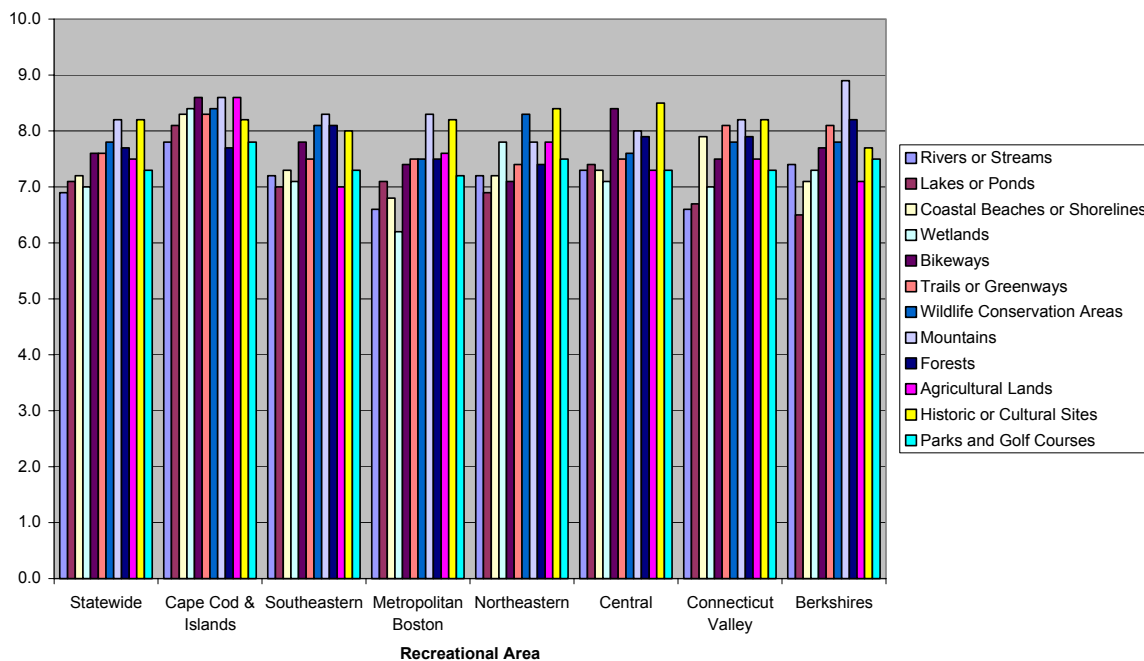


Figure 23. Top Reasons for Dissatisfaction with Recreational Areas



Respondents were asked to rate their satisfaction with recreation areas they had visited within the last twelve months using a 0-10 scale, and then to indicate their reasons for satisfaction or dissatisfaction. While at first glance responses appear to be skewed toward the upper end of the scale, (7 and up), experience shows that scales of this kind always yield "high" numbers. To interpret the results it should be understood that numbers in the high (8 to 9 range) indicate high satisfaction, those in the 7 to 8 range indicate moderate satisfaction, and numbers below 7 indicate low satisfaction. Water resources registered low satisfaction, which may partly be a reflection of the negative effects of heavy demand on this resource.

Figure 24. Satisfaction with Recreational Areas by Region



Regionally, there are few significant differences in satisfaction among resources. The Cape shows generally higher satisfaction with coastal beaches and wetlands than other regions, probably reflecting satisfaction with the abundance of these resources in the region. The Metropolitan Boston Region shows significantly lower satisfaction with coastal beaches and wetlands, which may be due to an inadequate supply of these resources, but is more likely due to the condition and reputation of the beaches in and around Boston. Satisfaction levels are likely to improve as efforts to clean up Boston Harbor and improve area beaches proceed.

Very few differences among demographic groups were found, except for indications of dissatisfaction with coastal beaches among African-Americans, and dissatisfaction with golf courses and neighborhood parks among the disabled. Dissatisfaction among African-Americans, again, may be explained by the fact that eighty-eight percent of African-American respondents were from the urbanized Metropolitan Boston area. Their comments could be a result of the poor condition of Boston area beaches, or inadequate access to beaches outside of Boston, or both. Disabled access to neighborhood parks is an issue that has already been raised and which may be addressed through required modifications under the Americans with Disabilities Act.

Reasons for satisfaction and dissatisfaction were fairly consistent across resource types. "Attractiveness of the setting" was the top reason cited for satisfaction, but this category is difficult to interpret as "attractiveness" can mean many things to many people. "Cleanliness" was a key reason for both satisfaction (second most frequent reason) and dissatisfaction (top reason given). It most likely is a combination of several factors and indicates some core value that drives users to recreation resources.

Figure 25. Reasons for Dissatisfaction with Recreational Areas	Rivers or Streams	Lakes or Pond	Coastal Beaches or Shorelines	Wetlands	Bikeways	Trails or Greenways	Wildlife Conservation Areas	Mountains	Forests	Agricultural Lands	Historic or Cultural Sites	Parks and Golf Courses
Access to the site	1.9	4.4	2.4	0.0	3.7	0.0	0.0	0.0	0.0	0.0	3.0	1.7
Activities available	0.0	1.3	0.0	20.7	0.0	0.0	0.0	0.0	0.0	0.0	12.3	8.0
Attractiveness of the setting	10.0	12.6	18.5	28.6	3.7	0.0	0.0	0.0	17.8	0.0	21.5	11.9
Capacity	2.6	3.9	1.8	0.0	8.3	0.0	0.0	41.3	22.8	0.0	0.0	2.1
Cleanliness	76.1	65.3	76.6	80.1	50.8	59.4	13.9	5.5	64.1	0.0	27.6	50.1
Cost / price	0.0	2.2	1.5	0.0	0.0	0.0	0.0	22.1	0.0	19.3	7.8	0.0
Courteousness/helpfulness of staff	0.0	0.0	0.0	0.0	0.0	0.0	8.9	0.0	0.0	0.0	8.6	0.0
Distance to the site	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7
Education programs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Equipment at the facility	0.0	1.3	0.8	0.0	3.7	0.0	0.0	37.1	0.0	0.0	14.1	19.2
Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interpretive materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.3	0.0	0.0
Maintenance	8.9	16.0	17.1	22.4	46.8	6.6	43.9	5.5	10.6	0.0	18.1	41.9
Parking	0.0	3.8	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0
Safety of the location	5.8	1.0	2.6	0.0	5.8	0.0	0.0	0.0	0.0	0.0	8.3	12.7
Staff level	2.2	0.0	0.2	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	1.0
Other	12.5	13.0	12.9	19.9	20.0	29.6	33.2	35.3	26.3	80.7	22.2	12.1

Finally, availability of educational programs, hours of operation, and availability of interpretive materials do not appear to be factors in dissatisfaction.

From Assessing Demand to Filling Need

The *SCORP 2000* demand study offers broad insight into the outdoor recreation resources in Massachusetts and suggests ways these resources might be improved. The study has pointed out the differences that exist between geographic regions and among demographic groups. These findings provide planning agencies with information they can use to meet the demands of the public. Planners should carefully consider the underlying reasons for measured differences when using these findings. In the next chapter, more specific information will be provided to help in the evaluation and fulfillment of recreation needs.